

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>Case 734 PCT</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. <b>PCT/SE00/00665</b>	International filing date ( <i>day month year</i> ) <b>07.04.2000</b>	Priority date ( <i>day month year</i> ) <b>07.04.1999</b>
International Patent Classification (IPC) or national classification and IPC7 <b>H04L 12/56, H04Q 11/04</b>		
Applicant <b>Telia AB et al.</b>		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>  3  </u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>          </u> sheets.</p> <p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the report</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input type="checkbox"/> Certain defects in the international application</li> <li>VIII <input type="checkbox"/> Certain observations on the international application</li> </ul>
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Date of submission of the demand  <b>06.11.2000</b>	Date of completion of this report  <b>08.08.2001</b>
Name and mailing address of the IPEA/SE Patent- och registreringsverket      Telex: Box 5055                                      17970 S-102 42 STOCKHOLM                      PATOREG-S Facsimile No. 08-667 72 88	Authorized officer  <b>Rickard Elg/LR</b> Telephone No. 08-782 25 00

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SE00/00665

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	<u>1-25</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-25</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-25</u>	YES
	Claims		NO

**2. Citations and explanations (Rule 70.7)**

The following documents have been cited in the International Search Report:

D1: "Distributed Weighted Random Early Detection", Technical Specification from Cisco, 1998 [Online URL: <http://www-uk.cisco.com/univerced/cc/td/product/software/ios111/cc111/wred.pdf>]

D2: Clark D. & Fang. W, "Explicit Allocation of Best Effort Delivery Service", 1997, [Online URL: <http://diffserv.lcs.mit.edu/Papers/exp-alloc-ddc-wf.pdf>]

D3: Parris M. et al., "Lightweight Active Router-Queue Management for Multimedia Networking", Multimedia Computing and Networking", vol.3654, 1999

D4: WO, 96/29804, A1

D5: EP, 0,872,988, A2

D6: US, 5,546,389, A

The documents cited in the International Search Report represent the prior art. The claimed invention stated in claims 1-25 is not considered to be anticipated by these documents. None of the documents or any relevant combination of them reveal a method or system for active queue management as described by these claims.

According to the arguments stated above, the invention claimed in claims 1-25 is novel, considered to involve an inventive step and have industrial applicability.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SE00/00665

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed
- ☐ the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the claims:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement) under article 19  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheet/fig \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

**PCT**

From the INTERNATIONAL BUREAU

## NOTICE INFORMING THE APPLICANT OF THE COMMUNICATION OF THE INTERNATIONAL APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

To:

PRAGSTEN, Rolf  
Telia Research AB  
Vitsandsgatan 9  
S-123 86 Farsta  
SUÈDE

Inkom Kgp  
Telia Research AB

2000 -10- 20

<b>Date of mailing (day/month/year)</b> 12 October 2000 (12.10.00)		
<b>Applicant's or agent's file reference</b> Case 734 PCT		
<b>IMPORTANT NOTICE</b>		
<b>International application No.</b> PCT/SE00/00665	<b>International filing date (day/month/year)</b> 07 April 2000 (07.04.00)	<b>Priority date (day/month/year)</b> 07 April 1999 (07.04.99)
<b>Applicant</b> TELIA AB et al		

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:

US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

EE, EP, LT, LV, NO, PL, RU

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on 12 October 2000 (12.10.00) under No. WO 00/60817

### REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a **demand for international preliminary examination** must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

### REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the **national phase**, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No. (41-22) 740.14.35	Authorized officer  <p style="text-align: center;">J. Zahra</p> Telephone No. (41-22) 338.83.38
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# INTERNATIONAL COOPERATION TREATY

## PCT

### NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
 CP2/5C24  
 Arlington, VA 22202  
 ETATS-UNIS D'AMERIQUE  
 in its capacity as elected Office

<b>Date of mailing (day/month/year)</b> 14 December 2000 (14.12.00)	
<b>International application No.</b> PCT/SE00/00665	<b>Applicant's or agent's file reference</b> Case 734 PCT
<b>International filing date (day/month/year)</b> 07 April 2000 (07.04.00)	<b>Priority date (day/month/year)</b> 07 April 1999 (07.04.99)
<b>Applicant</b> BODIN, Ulf	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
06 November 2000 (06.11.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Nestor Santesso Telephone No.: (41-22) 338.83.38
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# PCT COOPERATION TREATY

## PCT

### INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>734</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/SE 00/00665</b>	International filing date ( <i>day/month/year</i> ) <b>7 April 2000</b>	(Earliest) Priority Date ( <i>day/month/year</i> ) <b>7 April 1999</b>
Applicant <b>Telia AB et al.</b>		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☐ Certain claims were found unsearchable (See Box I).
  
2. ☐ Unity of invention is lacking (See Box II).
  
3. ☐ The international application contains disclosure of a nucleotide and/or amino acid sequence listing and the international search was carried out on the basis of the sequence listing
 

☐ filed with the international application.  
☐ furnished by the applicant separately from the international application,  

☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.

☐ transcribed by this Authority.
  
4. With regard to the title, ☐ the text is approved as submitted by the applicant.  
☒ the text has been established by this Authority to read as follows:  

**"Method, system and router providing active queue management in packet transmission systems.**
  
5. With regard to the abstract,
 

☒ the text is approved as submitted by the applicant.  
☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
  
6. The figure of the drawings to be published with the abstract is:  

Figure No. 1      ☒ as suggested by the applicant.      ☐ None of the figures.  
☐ because the applicant failed to suggest a figure.  
☐ because this figure better characterizes the invention.

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: H04L 12/56, H04Q 11/04

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: H04Q, H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Technical specification from Cisco (1998), "Distributed Weighted Random Early Detection", 1998, URL; <a href="http://www-uk.cisco.Com/univerced/cc/td/product/softeare/ios111/cc111/wred.pdf">http://www-uk.cisco.Com/univerced/cc/td/product/softeare/ios111/cc111/wred.pdf</a> see whole document	1-25
A	Clard D. and Fang W. (1997), "Explicit Allocation of Best Effort Delivery Service", 1997, URL: <a href="http://diffserv.Ics.mit.edu/Papers/exp-alloc-ddc-wf.pdf">http://diffserv.Ics.mit.edu/Papers/exp-alloc-ddc-wf.pdf</a> see whole document	1-25

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

18 May 2000

Date of mailing of the international search report

25 -07- 2000

Name and mailing address of the ISA:

Swedish Patent Office  
Box 5055, S-102 42 STOCKHOLM  
Facsimile No. +46 8 666 02 86

Authorized officer

Johanna Lindqvist/AB  
Telephone No. +46 8 782 25 00

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 00/00665

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Multimedia Computing and networking, Volym 3654, 1999, (San José, CA), Mark Parris et al, "Lightweight Active Router-Queue management for Multimedia Networking", abstract --	1-25
A	WO 9629804 A1 (TELECOM FINLAND OY), 26 Sept 1996 (26.09.96), claims 1-6, abstract --	1-25
A	EP 0872988 A2 (LUCENT TECHNOLOGIES INC.), 21 October 1998 (21.10.98), claims 1-10, abstract --	1.25
A	US 5546389 A (MATTHIAS WIPPENBECK ET AL), 13 August 1996 (13.08.96), claims 1-8, abstract ----- --	1-25



# INTERNATIONAL SEARCH REPORT

Information on patent family members

02/12/99

International application No.

PCT/SE 00/00665

Patent document cited in search report			Publication date	Patent family member(s)		Publication date
WO	9629804	A1	26/09/96	AU	4946096 A	08/10/96
				EP	0818098 A	14/01/98
				FI	951278 D	00/00/00
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EP	0872988	A2	21/10/98	CA	2227244 A	07/08/98
				JP	10233802 A	02/09/98
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US	5546389	A	13/08/96	AU	671744 B	05/09/96
				AU	6611594 A	27/01/95
				CA	2127831 A	14/01/95
				CN	1110035 A	11/10/95
				DE	4323405 A	19/01/95
				EP	0639014 A	15/02/95
				JP	7154421 A	16/06/95
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